UNITED STATES GEOLOGICAL SURVEY

HOLE NO: 1C-79

LOCATION: Center of NE1/4 of Section 23, T 14 N, R 14 W,

Tyonek (B-5) Quadrangle, Alaska POINT-LOAD STRENGTH INDEX 5/ ATTERBERG UNCONFINED GRAIN SIZE **COLLAR ELEVATION: 580 meters** SLAKE DENSITIES **DISTRIBUTION** (approximate unconfined compressive strength) COMPRESSIVE DURABILITY plastic liquid Natural density INDEX sand STRENGTH Dry bulk density silt ----Natural moisture % Remaining Diametral (II) Anisotropy Axial (1) Grain density k Organic content (after 2 cycles) (T)/(II)MN/m2 in g/cc (%) Percent 1.0 2.0 3.0 4.0 5.0 LITHOLOGIC DESCRIPTION 1,0 2,0 3,0 4,0 5,0 1,0 2,0 10 30 50 70 90 10 30 50 70 90 13 15 17 19 21 23 25 27 10 30 50 70 90 1.0 2.0 3.0 4.0 5.0 Diamicton, (glacial deposits), largely unconsolidated with low-matrix recovery, materials range in size from clay to boulders, mostly volcanic and granitics with some metamorphic and sedimentary clasts Claystone, medium-gray, mostly massive Claystone, medium-dark-gray to light-olive-gray to brownish-black, mostly massive, upper and lower segments carbonaceous and slightly fissile, 0.1 m coal parting at base of upper and lower segments, middle area **—** • ----Coal, grayish-black with 0.1 m silty claystone parting, slightly fissile Coal, brownish-black Coal, brownish-black to grayish-brown Coal, brownish-black Claystone, medium-gray, silty, micaceous, massive Siltstone, medium-gray, massive, very firm Claystone, medium-dark-gray, slightly calcareous with 0.1 m fissile coaly . — Siltstone, medium-gray Sandstone, medium-gray, very fine- to medium-grained, upper part interbedded with siltstone and claystone 30-Interbedded claystone and siltstone, medium-dark-gray with thin coal lens Claystone, medium-dark-gray to medium-gray, upper half carbonaceous and fissile, lower half massive • |------___ Siltstone, medium dark gray, interbedded with medium gray, very finegrained sandstone Claystone, medium-dark-gray to medium-gray, interbedded with siltstone and very fine-grained sandstone Sandstone, medium-gray, fine-grained, friable, massive Claystone, medium-gray, silty, occasional carbonaceous stringers, friable Sandstone, medium-gray, fine-grained, occasional carbonaceous stringers, friable, massive Siltstone, medium-gray, massive, slickensided Claystone, medium-gray to dark-gray, 0.1 m siltstone interbed at top, many buff-colored concretions (iron oxide?) in upper half, . increasingly carbonaceous Coal, brownish-black to black, 0.2 m siltstone below and claystone above Interbedded claystone, siltstone, and sandstone, all coaly nat. den. (1.23), dry bulk den. (1.10); Coal, brownish-black • 1 Siltstone, medium-light-gray, sandy Claystone, medium-light-gray Coal, dusky-pale-brown, massive 50-Coal, dusky-brown to brownish-black, massive х• — Claystone, brownish-black grading to medium-dark-gray, very carbonaceous upper part Siltstone, medium-dark-gray to brownish-gray, carbonaceous, massive Sandstone, light-brownish-gray to medium-gray, very fine- to fine-grained, very friable in lower half Sandstone, olive-gray, very fine- to fine-grained, 0.1 m Siltstone lens near top, scattered siltstone lamina and lenses throughout Sandstone, medium-gray to olive-gray, very fine- to fine-grained Siltstone, medium-dark-gray to medium-light-gray Sandstone, medium-gray to olive-gray, very fine- to fine-grained, increasingly friable Sandstone, medium-light-gray, fine- to medium-grained, friable in part Sandstone, medium-light-gray, medium- to coarse-grained, friable Based on outcrop studies, geophysical logs, and drilling information this no-recovery zone is largely comprised of very friable sandstone, siltstone, and small-pebble conglomerate Conglomerate, medium-light-gray, pebbles to 2 cm, coal, fragments, Sandstone, medium-gray, coarsens downward Coal, brownish-black Coal, brownish-black ו 🖽 Claystone, medium-gray, coal stringers Coal, brownish-black, grades to carbonaceous claystone • ----Claystone, medium- to light-gray, coaly in part, 0.1 m siltstone lens near base Coal, black- to brownish-black, 0.05 m siltstone parting in upper third

EXPLANATION

DIAMICTON ||||| Clayey SANDSTONE Silty SILTSTONE Carbonaceous CLAYSTONE

> 1/ Tested in accordance with ASTM D 422-63. 2/ Tested in accordance with ASTM D 423 and D 424. 3/ Tested in accordance with ASTM D 854 and Chleborad and others, 1975. 4/ Tested in accordance with method described by Franklin and Chandra, 1972. 5/ Tested in accordance with method described by Brock and Franklin, 1972. Calculated in meganewtons/meters² using the formula: U=I s(50) X 24. Diametral test (loaded parallel to bedding planes)

> > Axial test (loaded perpendicular to bedding planes)

6/ Tested in accordance with ASTM D 2166-66. 2166-66.

CLAYSTONE- CARBONACEOUS

T.D. 121.0 m

1986